

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400



PATENT APPLICATION

ATTORNEY DOCKET NO. 200300643-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Robert Cobene et al

Confirmation No.: 8371

Application No.: 10/697,037

Examiner: Eric Andrew Gates

Filing Date: October 31, 2003

Group Art Unit: 3722

Title: SERIAL METHOD OF BINDING A TEXT BODY TO A COVER

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on March 20, 2008.

☒ The fee for filing this Appeal Brief is \$510.00 (37 CFR 41.20).

☐ No Additional Fee Required.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month
\$120

☐ 2nd Month
\$460

☐ 3rd Month
\$1050

☐ 4th Month
\$1640

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of \$ 510. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

☒ A duplicate copy of this transmittal letter is enclosed.

Date: May 20, 2008

Respectfully submitted,

Robert Cobene et al

By Patrick c. Keane

Patrick c. Keane

Attorney/Agent for Applicant(s)

Reg No. : 32,858

Date : May 20, 2008

Telephone : (703) 838-6525

I hereby certify that this document is being filed by personal delivery to the Customer Service Window Randolph Building, 401 Dulany Street Alexandria, VA 22314, of the United States Patent & Trademark Office on the date indicated above.

By: Patrick c. Keane Reg No 32, 858
(Attorney Signature and Reg. No.)

Table of Contents

I.	Real Party in Interest.....	2
II.	Related Appeals and Interferences.....	2
III.	Status of Claims.....	2
IV.	Status of Amendments.....	2
V.	Summary Claimed Subject Matter.....	2
VI.	Grounds of Rejection to be Reviewed on Appeal.....	4
VII.	Argument	5
VIII.	Claims Appendix	8
IX.	Evidence Appendix	8
X.	Related Proceedings Appendix.....	8

I. Real Party in Interest

The present application is assigned to Hewlett-Packard Development Company, L.P. Hewlett-Packard Development Company, L.P. is the real party in interest, and is the assignee of Application No. 0/697,037.

II. Related Appeals and Interferences

The Appellant legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1 and 3-41 remain pending and have been finally rejected. Claims 1 and 3-41 are the subject of this appeal. Claim 2 was previously canceled. Claims 42-71 have been withdrawn from consideration following a restriction requirement. Claim 1 is the sole independent claim on appeal, and was previously amended to include what the Examiner had identified as allowable subject matter in claim 2.

IV. Status of Amendments

All prior amendments, including the last amendment filed February 12, 2007, have been entered. A Request For Reconsideration was filed August 20, 2007. There are no pending amendments

V. Summary Claimed Subject Matter

Pursuant to 37 C.F.R. §41.37(1)(c)(v), the subject matter of independent claim 1 on appeal is cross-referenced to the specification and/or drawing figures in the following table. The following table is not to be construed as a representation that the portions of the disclosure identified below constitutes the sole basis for support for the claimed subject matter.

1. (Previously Presented) A method of binding a text body to a cover with an adhesive to form a bound document, the method comprising:	Eg. Fig. 1, method 100 Spec. p. 4, ¶ [0016], ll. 1-2 See also Figs. 2, 3
applying an adhesive to a contacting surface of a plurality of sheets of the text body on an individual sheet-wise basis; and	Eg. Fig. 1, 102 Adhesive 104 Spec. p. 4, ¶ [0016], ll. 2-4 See also Figs. 2, 3
adhering the plurality of sheets to the cover on an individual sheet-wise basis by making line contact between the contacting surface and the cover and by curing the adhesive, wherein the applied adhesive forms a non-zero contact angle with the contacting surface.	Eg. Fig. 1, 110 Cover 112 Spec. p. 4, ¶ [0016], ll. 4-7 See also Figs. 2, 3 Re: non-zero contact angle, see, e.g., spec. p. 8, ¶ [0023], ll. 1-17

Figure 1 shows an exemplary method of a bookbinding operation for binding a text body 108 to a cover 112 with an adhesive to form a bound document. (See specification p. 4, ¶ [0016], lines 1-7). Adhesive 104 is applied to a contacting surface 106 of plural sheets of text body 108 on a **individual sheet-wise basis**. The plural sheets adhere to the cover 112 on an **individual sheet-wise basis** for making **line contact** between the contacting surface 106 and the cover 112 and by curing the adhesive. Figures 2 and 3 show similar bookbinding operations.

As described at specification page 8, ¶ [0023], the applied adhesive forms a non-zero contact angle with the contacting surface. As described therein, the contact angle originates with the balance of forces at the line of contact between a liquid, solid and gas (e.g., the applied adhesive and the contacting surface). A non-zero contact angle is used such that the adhesive both flows along and into the contacting surface to provide adequate adhesion to the contact surface and to form a bead on the contacting surface to provide a volume of the adhesive to adhere to a surface to which the contacting surface is contacted (spec. p. 8, last sentence).

As described at specification page 9, ¶ [0024], lines 1-3, the adhesive's viscosity will affect the contact angle. In addition, the sentence bridging specification pp. 11-12 indicates that edge preparation of the contacting surface can affect surface energy of the contacting surface which, in turn, can affect the contact angle (see spec. p. 12, ll 1-2).

Figures 5 and 6, described on specification page 17, ¶ [0034] and [0035], illustrate a contacting surface 500 wherein adhesive 506 forms a contact angle Θ_c with contacting surface edge 504. In Figure 6, adhesive 606 forms a contact angle Θ_c with edge 604.

Appellants' claims encompass the illustrated methods and systems whereby adhesive is applied in an **individual sheet-wise basis** to a contact surface, to make **line contact** with the cover, and the applied adhesive forms a **non-zero contact angle** with the contacting surface.

VI. Grounds of Rejection to be Reviewed on Appeal

- A. Whether Claims 1, 11, 12, 15, 16, 19, 22, 23, 32, 33, 36, and 39, Rejected Pursuant to 35 U.S.C. §102(e), Are Novel Over U.S. Patent Publication No. 2003/0086773 (Lawton)?
- B. Whether Claims 3 and 24, Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In View Of U.S. Patent No. 6,799,391 (Bergholtz)?
- C. Whether Claims 4, 5, 25, and 26 Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In view of U.S. Patent No. 6,213,703 (Garrido)?
- D. Whether Claims 6-10, 17, 18, 20, 21, 27-31, 37, 38, 40, and 41 Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In view of U.S. Patent No. 6,273,661 (Payne)?
- E. Whether Claims 13, 14, 34, and 35 Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In view of U.S. Patent Publication No. 2002/0067977 (Cobene)?

VII. Argument

- A. Claims 1, 11, 12, 15, 16, 19, 22, 23, 32, 33, 36, and 39 Rejected Pursuant to 35 U.S.C. §102(e), Are Novel Over U.S. Patent Publication No. 2003/0086773 (Lawton).

The Office Action rejects claim 1, and various dependent claims under 35 U.S.C. §102(e) as being anticipated by U.S. Publication No. 2003/0086773 to Lawton. This rejection is respectfully traversed, and a withdraw of this rejection is requested, because claim 1 recites applying adhesive to a contacting surface of plural sheets on an **individual sheet-wise basis**, and adhering the plural sheets by making **line contact** between the contacting surface and the cover, wherein the adhesive forms a **non-zero** contact angle with the contacting surface. Such features encompass, for example, the exemplary adhesive which forms a non-zero contact angle with the contacting surface used to make line contact with a cover in Applicants' Figures 5 and 6, for each of the individual sheets bound to a cover.

The Examiner had reconsidered the allowability of this feature in asserting that the adhesive 112 is included on the front of each page in the Lawton publication's Figure 8, and that for one sheet 102(1), the adhesive 112 would contact cover 104. However, the Examiner's analysis only holds true for sheet 102(1) and not for the plurality of sheets bound to cover 104. The Lawton publication's Figure 8 does not read on Applicants' claim 1 combination. Appellants' respectfully assert that the Examiner's initial conclusions regarding the allowability of the present claims was correct, and that claim 1 is allowable.

The Lawton publication does not disclose applying an adhesive to a contacting surface of a plurality of sheets of a text body on an individual sheet-wise basis, wherein the applied adhesive forms a non-zero contact angle with the contacting surface as in Appellants' independent claim 1. For example, Applicants' embodiment illustrated in Fig. 5 illustrates sheet 502 has a contacting surface 504. Adhesive 506 is applied to contacting surface 504 at contact angle Θ_c .

In rejecting claim 1 in the paragraph bridging pages 2-3 of the Office Action, the Examiner refers to Figures 8 and 9 of the Lawton publication. In Figures 8 and 9,

adhesive 110, 112, 114 is applied to both an edge which makes line contact, **and** to adjacent sides of pages 102. As such the adhesive forms a **zero** contact angle with a page edge. The Lawton publication does not disclose adhesive applied to a contacting surface which makes "line contact" with a cover for each "of a plurality of sheets of the text body on an individual sheet-wise basis ... wherein the applied adhesive forms a non-zero contact angle with the contacting surface," as recited in Appellants' claim 1.

In numbered paragraph 23 on page 10 of the Office Action, the Examiner's "Response To Arguments" asserts (beginning with the sentence bridging pages 10-11):

The contacting surface of each sheet 102 (the portion of the sheet that contacts the adhesive 110/112/114) includes the top edge **and** the sides of the sheet. The top edge portion of each sheet is adhered to the cover 104/106 on an individual sheet-wise basis. The applied adhesive (portions 112 and 114) forms a non-zero contact angle with the contacting surface (**the side portions**) of each sheet 102. (Bold and underlining added)

However, Appellants' claim 1 recites that the "contacting surface" is a surface which makes "line contact" with the cover. The applied adhesive of Appellants' claim 1 forms "a non-zero contact angle" with this contacting surface. Thus, claim 1 distinguishes over the Lawton document wherein the sides of the sheets 102 do not constitute contacting surfaces which make "line contact" with a cover.

Claim 1 is therefore novel over the Lawton document, as are all claims which depend therefrom.

- B. Claims 3 and 24, Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In View Of U.S. Patent No 6,799,391 (Bergholtz).

The Bergholtz patent does not overcome the deficiencies of the Lawton publication described above. For example, Fig. 4B of the Bergholtz patent discloses a thin film of adhesive 41 printed in a "selected pattern on a top layer 36" of a web (see col. 3, lines 51-54). The Bergholtz patent does not disclose applying adhesive on an individual sheet-wise basis as in Appellants' claim 1.

- C. Claims 4, 5, 25, and 26, Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In View Of U.S. Patent No. 6,213,703 (Garrido).

The Garrido patent, does not overcome the deficiencies of the Lawton publication described above. For example, the Garrido patent discloses a gluing means 14 (see col. 6, lines 43-44), and gluing of collective (not individual) sheets to a book spine (see e.g., col. 10, lines 42-45). The Garrido patent does not disclose applying adhesive on an individual sheet-wide basis as in Appellants' claim 1.

- D. Claims 6-10, 17, 18, 20, 21, 27-31, 37, 38, 40, and 41, Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In View Of U.S. Patent No. 6,273,661 (Payne).

The Payne patent does not overcome the deficiencies of the Lawton publication described above. For example, the Payne patent discloses applying adhesive onto a collective stack (not individual sheets) of printed sheets, via the Figure 1 glue-jet cartridge 101. The Payne patent does not disclose applying adhesive on an individual sheet-wide basis as in Appellants' claim 1.

- E. Claims 13, 14, 34, and 35, Rejected Pursuant to 35 U.S.C. §103(a), Are Patentably Distinct Over The Lawton Publication In View Of U.S. Patent Publication No. 2002/0067977 (Cobene).

The Cobene III publication does not overcome the deficiencies of the Lawton publication described above. For example, the Cobene II patent discloses a plurality of sheets having a spinal area 34 bounded by two-sided hinge areas 36, 38. A hot melt adhesive 46 is pre-formed, and applied to the text body spine 34. Melted adhesive conforms to the exposed surface features of spinal area 34 and flows into spaces between the edges of the sheets by capillary action. The Cobene II patent does not disclose applying adhesive on an individual sheet-wide basis as in Appellants' claim 1.

F. Conclusion

Appellants request reversal and withdrawal of the Examiner's Final Rejection of claims 1 and 3-41.

VIII. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

IX. Evidence Appendix

See attached Evidence Appendix for copies of evidence relied upon by Appellant.

X. Related Proceedings Appendix

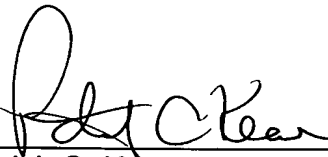
See attached Related Proceedings Appendix for copies of decisions identified in Section II, supra.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date May 20, 2008

By:



Patrick C. Keane
Registration No. 32858

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620

VIII. CLAIMS APPENDIX

The Appealed Claims

1. (Previously Presented) A method of binding a text body to a cover with an adhesive to form a bound document, the method comprising:

applying an adhesive to a contacting surface of a plurality of sheets of the text body on an individual sheet-wise basis; and

adhering the plurality of sheets to the cover on an individual sheet-wise basis by making line contact between the contacting surface and the cover and by curing the adhesive, wherein the applied adhesive forms a non-zero contact angle with the contacting surface.

2. (Cancel)

3. (Previously Presented) The method of claim 1, wherein a viscosity of the adhesive is greater than 1000 centipoises and less than 15,000 centipoises.

4. (Original) The method of claim 1, comprising preparing each of the plurality of sheets of the text body along the contacting surface prior to applying the adhesive.

5. (Previously Presented) The method of claim 4, wherein preparing increases a surface area of the contacting surface, exposes a plurality of base fibers of the sheets, or increases the surface area and exposes the plurality of base fibers.

6. (Original) The method of claim 1, wherein applying the adhesive includes dispensing the adhesive from a dispenser, the dispenser including a time-pressure system, a piston-valve system, an auger-valve system, or a jetting system.

7. (Original) The method of claim 1, wherein applying the adhesive includes dispensing the adhesive from a dispenser including a Micro-Electro-Mechanical System, the adhesive is dispensed as a continuous bead on the contacting surface, and a volume of the continuous bead is less than or equal to three microliters.

8. (Original) The method of claim 7, wherein the Micro-Electro-Mechanical System is a thermal ink jet device

9. (Original) The method of claim 1, wherein applying the adhesive includes dispensing the adhesive from a dispenser including a Micro-Electro-Mechanical System, the adhesive is dispensed as a plurality of individual sub-beads on the contacting surface, and a volume of each individual sub-bead is less than or equal to ten nanoliters.

10. (Original) The method of claim 9, wherein the Micro-Electro-Mechanical System is a thermal ink jet device.

11. (Original) The method of claim 1, wherein the plurality of sheets includes an unfolded sheet and the contacting surface is an edge of the unfolded sheet.

12. (Original) The method of claim 11, comprising constraining the sheet to maintain the edge straight.

13. (Original) The method of claim 1, wherein the plurality of sheets includes a folded sheet and the contacting surface is a folded edge of the folded sheet.

14. (Original) The method of claim 13, comprising constraining the folded sheet to maintain the folded edge straight.

15. (Original) The method of claim 1, wherein the contacting surface makes line contact with the cover in an area of a spine of the bound document.

16. (Original) The method of claim 1, wherein the adhesive is a hot melt adhesive, a light curable adhesive, a two-part adhesive system or a moisture curable adhesive.

17. (Original) The method of claim 1, wherein applying the adhesive places a plurality of nanoliter volume beads on the contacting surface at an application rate of no slower than 1 bead per 100 microseconds.

18. (Original) The method of claim 1, wherein the plurality of sheets includes a sheet of 20 lb bond paper, the adhesive is a light curable adhesive having a viscosity of 10,000 to 12,000 centipoises, applying the adhesive dispenses a plurality of individual sub-beads on the contacting surface, a volume of each individual sub-bead is less than or equal to ten nanoliters, and the adhesive cures in less than or equal to 20 seconds to bond the contacting surface to the cover.

19. (Original) The method of claim 1, comprising forming the cover around the text body.

20. (Original) The method of claim 1, wherein the adhesive has a first surface energy, the contacting surface has a second surface energy, and a difference between the first surface energy and the second surface energy is from 13 to 25 dynes per cm.

21. (Previously Presented) The method of claim 1, wherein the plurality of sheets includes a cellulosic sheet having a surface energy of 30 to 37 dynes per cm, the adhesive is a light curable adhesive having a surface energy of 50 to 55 dynes per cm, applying the adhesive dispenses a plurality of individual sub-beads on the contacting surface, a volume of each individual sub-bead is less than or equal to ten nanoliters, and the adhesive cures in less than or equal to 20 seconds to bond the contacting surface to the cover, and

wherein calculations for surface energy are based on Young's equation, and the surface energy is determined from contact angles of a polar solvent and a nonpolar solvent.

22. (Original) The method of claim 1, wherein the applied adhesive is a first part of a two-part adhesive system and the method comprises applying a second part of the two-part adhesive system to the cover prior to adhering the plurality of sheets to the cover on an individual sheet-wise basis.

23. (Original) The method of claim 22, wherein the applied first part of the two-part adhesive system forms a non-zero contact angle with the contacting surface.

24. (Original) The method of claim 23, wherein a viscosity of the first part of the two-part adhesive system is greater than 1000 centipoises and less than 15,000 centipoises.

25. (Original) The method of claim 22, comprising preparing each of the plurality of sheets of the text body along the contacting surface prior to applying the first part of the two-part adhesive system.

26. (Original) The method of claim 25, wherein preparing increases a surface area of the contacting surface, exposes a plurality of base fibers of the sheets, or a combination thereof.

27. (Original) The method of claim 22, wherein applying the first part of the two-part adhesive system includes dispensing the first part of the two-part adhesive system from a dispenser, the dispenser including a time-pressure system, a piston-valve system, an auger-valve system, or a jetting system.

28. (Original) The method of claim 22, wherein applying the first part of the two-part adhesive system includes dispensing the first part of the two-part adhesive system from a dispenser including a Micro-Electro-Mechanical System, the first part of the two-part adhesive system is dispensed as a continuous bead on the contacting surface, and a volume of the continuous bead is less than or equal to three microliters.

29. (Original) The method of claim 28, wherein the Micro-Electro-Mechanical System is a thermal ink jet device

30. (Original) The method of claim 22, wherein applying the first part of the two-part adhesive system includes dispensing the first part of the two-part adhesive system from a dispenser including a Micro-Electro-Mechanical System, the first part of the two-part adhesive system is dispensed as a plurality of individual sub-beads on the contacting surface, and a volume of each individual sub-bead is less than or equal to ten nanoliters.

31. (Original) The method of claim 30, wherein the Micro-Electro-Mechanical System is a thermal ink jet device.

32. (Original) The method of claim 22, wherein the plurality of sheets includes an unfolded sheet and the contacting surface is an edge of the unfolded sheet.

33. (Original) The method of claim 32, comprising constraining the sheet to maintain the edge straight.

34. (Original) The method of claim 22, wherein the plurality of sheets includes a folded sheet and the contacting surface is a folded edge of the folded sheet.

35. (Original) The method of claim 34, comprising constraining the folded sheet to maintain the folded edge straight.

36. (Original) The method of claim 22, wherein the contacting surface makes line contact with the cover in an area of a spine of the bound document.

37. (Original) The method of claim 22, wherein applying the first part of the two-part adhesive system places a plurality of nanoliter volume beads on the contacting surface at an application rate of no slower than 1 bead per 100 microseconds.

38. (Original) The method of claim 22, wherein the plurality of sheets includes a sheet of 20 lb bond paper, the first part of the two-part adhesive system has a viscosity of 10,000 to 12,000 centipoises, applying the first part of the two-part adhesive system dispenses a plurality of individual sub-beads on the contacting surface, a volume of each individual sub-bead is less than or equal to ten nanoliters, and the two-part adhesive system cures in less than or equal to 20 seconds to bond the contacting surface to the cover.

39. (Original) The method of claim 22, comprising forming the cover around the text body.

40. (Original) The method of claim 22, wherein the first part of the two-part adhesive system has a first surface energy, the contacting surface has a second surface energy, and a difference between the first surface energy and the second surface energy is from 13 to 25 dynes per cm.

41. (Previously Presented) The method of claim 22, wherein the plurality of sheets includes a cellulosic sheet having a surface energy of 30 to 37 dynes per cm, the first part of the two-part adhesive system is a portion of a light curable adhesive system having a surface energy of 50 to 55 dynes per cm, applying the first part of the two-part adhesive system dispenses a plurality of individual sub-beads on the contacting surface, a volume of each individual sub-bead is less than or equal to ten nanoliters, and the light curable adhesive system cures in less than or equal to 20 seconds to bond the contacting surface to the cover, and

wherein calculations for surface energy are based on Young's equation, and the surface energy is determined from contact angles of a polar solvent and a nonpolar solvent.

42. (WITHDRAWN) A method of binding a text body to a cover with an adhesive to form a bound document, the method comprising:

positioning each of a plurality of sheets of the text body in a stand-off position from the cover on an individual sheet-wise basis, the stand-off position forming a gap between the contacting surface and the cover;

applying an adhesive into the gap on an individual sheet-wise basis, the adhesive contacting both the contacting surface and the cover; and

curing the adhesive to adhere the sheet to the cover.

43. (WITHDRAWN) The method of claim 42, wherein the applied adhesive forms a non-zero contact angle with the contacting surface.

44. (WITHDRAWN) The method of claim 43, wherein a viscosity of the adhesive is greater than 1000 centipoises and less than 15,000 centipoises.

45. (WITHDRAWN) The method of claim 42, comprising preparing each of the plurality of sheets of the text body along the contacting surface prior to applying the adhesive.

46. (WITHDRAWN) The method of claim 45, wherein preparing increases a surface area of the contacting surface, exposes a plurality of base fibers of the sheets, or a combination thereof.

47. (WITHDRAWN) The method of claim 42, wherein applying the adhesive includes dispensing the adhesive from a dispenser, the dispenser including a time-pressure system, a piston-valve system, an auger-valve system, or a jetting system.

48. (WITHDRAWN) The method of claim 42, wherein applying the adhesive includes dispensing the adhesive from a dispenser including a Micro-Electro-Mechanical System, the adhesive is dispensed as a continuous bead on the contacting surface, and a volume of the continuous bead is less than or equal to three microliters.

49. (WITHDRAWN) The method of claim 48, wherein the Micro-Electro-Mechanical System is a thermal ink jet device

50. (WITHDRAWN) The method of claim 42, wherein applying the adhesive includes dispensing the adhesive from a dispenser including a Micro-Electro-Mechanical System, the adhesive is dispensed as a plurality of individual sub-beads on the contacting surface, and a volume of each individual sub-bead is less than or equal to ten nanoliters.

51. (WITHDRAWN) The method of claim 50, wherein the Micro-Electro-Mechanical System is a thermal ink jet device.

52. (WITHDRAWN) The method of claim 42, wherein the plurality of sheets includes an unfolded sheet and the contacting surface is an edge of the unfolded sheet.

53. (WITHDRAWN) The method of claim 42, comprising constraining the sheet to maintain the edge straight.

54. (WITHDRAWN) The method of claim 42, wherein the plurality of sheets includes a folded sheet and the contacting surface is a folded edge of the folded sheet.

55. (WITHDRAWN) The method of claim 54, comprising constraining the folded sheet to maintain the folded edge straight.

56. (WITHDRAWN) The method of claim 42, wherein the contacting surface makes line contact with the cover in an area of a spine of the bound document.

57. (WITHDRAWN) The method of claim 42, wherein the adhesive is a hot melt adhesive, a light curable adhesive, a two-part adhesive system or a moisture curable adhesive.

58. (WITHDRAWN) The method of claim 42, wherein applying the adhesive places a plurality of nanoliter volume beads on the contacting surface at an application rate of no slower than 1 bead per 100 microseconds.

59. (WITHDRAWN) The method of claim 42, wherein the plurality of sheets includes a sheet of 20 lb bond paper, the adhesive is a light curable adhesive having a viscosity of 10,000 to 12,000 centipoises, applying the adhesive dispenses a plurality of individual sub-beads on the contacting surface, and a volume of each individual sub-bead is less than or equal to ten nanoliters, and the adhesive cures in less than or equal to 20 seconds to bond the contacting surface to the cover.

60. (WITHDRAWN) The method of claim 42, comprising forming the cover around the text body.

61. (WITHDRAWN) The method of claim 42, wherein the adhesive has a first surface energy, the contacting surface has a second surface energy, and a difference between the first surface energy and the second surface energy is from 13 to 25 dynes per cm.

62. (WITHDRAWN) The method of claim 42, wherein the plurality of sheets includes a cellulosic sheet having a surface energy of 30 to 37 dynes per cm, the adhesive is a light curable adhesive having a surface energy of 50 to 55 dynes per cm, applying the adhesive dispenses a plurality of individual sub-beads on the contacting surface, and a volume of each individual sub-bead is less than or equal to ten nanoliters, and the adhesive cures in less than or equal to 20 seconds to bond the contacting surface to the cover, and

wherein calculations for surface energy follow the method of Owens and Wendt.

63. (WITHDRAWN) A system for binding a text body to a cover with an adhesive to form a bound document, the system comprising:

means for applying an adhesive to a contacting surface of a plurality of sheets of the text body on an individual sheet-by-sheet basis; and

means for relative motion between the individual sheets of the text body and the cover to make line contact between the contacting surface and the cover.

64. (WITHDRAWN) The system of claim 63, wherein means for applying includes a dispenser containing a time-pressure system, a piston-valve system, an auger-valve system, or a jetting system.

65. (WITHDRAWN) The system of claim 63, wherein means for applying includes a dispenser containing a Micro-Electro-Mechanical System.

66. (WITHDRAWN) The system of claim 63, wherein means for applying dispenses a plurality of individual sub-beads of the adhesive on the contacting surface and a volume of each individual sub-bead is less than or equal to ten nanoliters.

67. (WITHDRAWN) The system of claim 63, wherein the adhesive has a first surface energy, the contacting surface has a second surface energy, and a difference between the first surface energy and the second surface energy is from 13 to 25 dynes per cm.

68. (WITHDRAWN) The system of claim 63, wherein means for relative motion includes a clamping device holding the individual sheets in contacting alignment with the cover, wherein the clamping device is mounted for translation on a support.

69. (WITHDRAWN) The system of claim 68, wherein the support is a rail and means for relative motion further includes a source of motive force for translating the clamping device.

70. (WITHDRAWN) The system of claim 63, comprising means for curing the adhesive to adhere the individual sheet of the text body to the cover.

71. (WITHDRAWN) The system of claim 70, wherein means for curing is a radiation source, a heat source or a heat sink.

IX. EVIDENCE APPENDIX

NONE

X. RELATED PROCEEDINGS APPENDIX

NONE